

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 12, 2003

**TO:** K. Fortenberry, Technical Director  
**FROM:** D. Grover and M. Sautman, Hanford Site Representatives  
**SUBJ:** Activity Report for the Week Ending December 12, 2003

Tank Farms: CH2M Hill Hanford Group (CHG) is starting to go after many of the training problems that led to the S-112 saltcake dissolution shutdown two weeks ago. For example, a much harder test was included in the operator's retrieval training provided this week (partially observed by the Site Rep) compared to the previous self-administered/graded tests. The new field training checklists are thorough and require the operator to declare they have been adequately trained. Operations Engineer (OE) training is to focus more on the flow down of controls from the Process Control Plan to the procedure whereas before the OE did not even have to read the Process Control Plan. Readiness review evaluations also need to go beyond just reviewing the training plan and records and examine actual operator level of knowledge. (IV)

A CHG study indicates that waste retrievals can be supported through the end of their contract (i.e., 2006) without creating any new Category A tanks, double shell tanks (DST) more than half full with solids, or having to significantly change the configuration of existing Category A tanks. In order to store more waste in DST's, CHG hopes to increase the fill height (but offset load with lower specific gravity) in up to 12 tanks and allow the evaporator to concentrate above s.g. of 1.41. The latter will require tighter control of the feed and evaporator operations through the use of air lift circulators and densitometers. CHG also plans to seek permanent relief from DST sludge and bulk chemistry controls. These initiatives require further staff review. (II)

Waste Treatment Plant: One of the original goals of the pulse jet mixer research program was to reduce the necessary air demand from the baseline requirements. However, results to date indicate that to achieve full mixing in the non-Newtonian fluid tanks, the airflow needs to be increased (not decreased) by a factor of 3 to 4. The Office of River Protection decided this week to spend a few more months performing additional research and testing in order to optimize the design and reduce the required airflow. In the interim, holds have been placed on the tank, piping, and penetration design and procurement which is causing the schedule to slip. (III)

Sludge Retrieval and Disposition Project (SRDP): A Site Rep review of the facility modification package for the Argon Inert Ventilation System has identified that the SRDP may have inappropriately performed the associated Unreviewed Safety Question (USQ) screening. The facility modification package downgraded one pressure indicator from Safety Significant to General Service. This pressure indicator is specifically called out for use to perform a Limiting Condition of Operation Surveillance Requirement. However, the USQ screening question did not identify that this changed the facility as described in the AB documentation. Additional safety equipment was also added to system but also did not result in a USQ evaluation. The staff is continuing to evaluate the design modifications for this system and the associated control strategy to counter the potential single point failures in the system design. (IV)